

**UTILITY PATENT APPLICATION TRANSMITTAL  
(Small Entity)***(Only for new nonprovisional applications under 37 CFR 1.53(b))*Docket No.  
30/1183USTotal Pages in this Submission  
417306 U.S. P.D.  
10/6/03  
08/06/03**TO THE ASSISTANT COMMISSIONER FOR PATENTS****B x Patent Application  
Washington, D.C. 20231**

Transmitted herewith for filing under 35 U.S.C. 111(a) and 37 C.F.R. 1.53(b) is a new utility patent application for an invention entitled:

**COMPUTER AIDED LIGAND-BASED AND RECEPTOR-BASED DRUG DESIGN UTILIZING MOLECULAR SHAPE**

and invented by:

**Randy J. Zauhar  
William J. Welsh****If a CONTINUATION APPLICATION, check appropriate box and supply the requisite information:**☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: \_\_\_\_\_

Which is a:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: \_\_\_\_\_

Which is a:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: \_\_\_\_\_

Enclosed are:

**Application Elements**

1. ☐ Filing fee as calculated and transmitted as described below
2. ☒ Specification having 39 pages and including the following:
  - a. ☒ Descriptive Title of the Invention
  - b. ☒ Cross References to Related Applications *(if applicable)*
  - c. ☐ Statement Regarding Federally-sponsored Research/Development *(if applicable)*
  - d. ☐ Reference to Sequence Listing, a Table, or a Computer Program Listing Appendix
  - e. ☒ Background of the Invention
  - f. ☒ Brief Summary of the Invention
  - g. ☒ Brief Description of the Drawings *(if filed)*
  - h. ☒ Detailed Description
  - i. ☒ Claim(s) as Classified Below
  - j. ☒ Abstract of the Disclosure

# UTILITY PATENT APPLICATION TRANSMITTAL (Small Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No.  
30/1183US

Total Pages in this Submission  
4

## Application Elements (Continued)

3. ☒ Drawing(s) (when necessary as prescribed by 35 USC 113)
- a. ☒ Formal      Number of Sheets      29
- b. ☐ Informal      Number of Sheets      \_\_\_\_\_
4. ☒ Oath or Declaration
- a. ☐ Newly executed (original or copy)      ☒ Unexecuted
- b. ☐ Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional application only)
- c. ☒ With Power of Attorney      ☐ Without Power of Attorney
- d. ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s) named in the prior application,  
see 37 C.F.R. 1.63(d)(2) and 1.33(b).
5. ☐ Incorporation By Reference (usable if Box 4b is checked)  
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. ☐ CD ROM or CD-R in duplicate, large table or Computer Program (Appendix)
7. ☐ Application Data Sheet (See 37 CFR 1.76)
8. ☐ Nucleotide and/or Amino Acid Sequence Submission (if applicable, all must be included)
- a. ☐ Computer Readable Form (CFR)
- b. ☐ Specification Sequence Listing on:
- i. ☐ CD-ROM or CD-R (2 copies); or
- ii. ☐ Paper
- c. ☐ Statement(s) Verifying Identical Paper and Computer Readable Copy

## Accompanying Application Parts

9. ☐ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(B) Statement (when there is an assignee)
11. ☐ English Translation Document (if applicable)
12. ☐ Information Disclosure Statement/PTO-1449      ☐ Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)
16. ☒ Certificate of Mailing
- ☐ First Class      ☒ Express Mail (Specify Label No.): ER288692255US

**UTILITY PATENT APPLICATION TRANSMITTAL  
(Small Entity)**

*(Only for new nonprovisional applications under 37 CFR 1.53(b))*

Docket No.  
30/1183US

Total Pages in this Submission  
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**Accompanying Application Parts (Continued)**

17. ☒ Applicant claims small entity status. See 37 CFR 1.27.

☐ (Optional) Small Entity Statement(s) - Specify Number of Statements Submitted: \_\_\_\_\_

18. ☒ Additional Enclosures *(please identify below)*:

Petition Under 37 CFR 1.84(a)(2) For Acceptance of Color Drawings

**Request That Application Not Be Published Pursuant To 35 U.S.C. 122(b)(2)**

19. ☒ Pursuant to 35 U.S.C. 122(b)(2), Applicant hereby requests that this patent application not be published pursuant to 35 U.S.C. 122(b)(1). Applicant hereby certifies that the invention disclosed in this application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication of applications 18 months after filing of the application.

***Warning***

***An applicant who makes a request not to publish, but who subsequently files in a foreign country or under a multilateral international agreement specified in 35 U.S.C. 122(b)(2)(B)(i), must notify the Director of such filing not later than 45 days after the date of the filing of such foreign or international application. A failure of the applicant to provide such notice within the prescribed period shall result in the application being regarded as abandoned, unless it is shown to the satisfaction of the Director that the delay in submitting the notice was unintentional.***

**UTILITY PATENT APPLICATION TRANSMITTAL**  
**(Small Entity)**

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No.  
30/1183US

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4

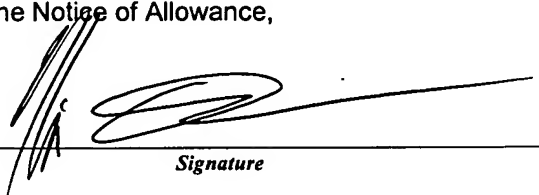
**Fee Calculation and Transmittal**

**CLAIMS AS FILED**

For	#Filed	#Allowed	#Extra	Rate	Fee
Total Claims	11	- 20 =	0	x \$9.00	\$0.00
Indep. Claims	1	- 3 =	0	x \$42.00	\$0.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
BASIC FEE					\$375.00
OTHER FEE (specify purpose) _____					\$0.00
TOTAL FILING FEE					\$375.00


- ☐ \*A check in the amount of \_\_\_\_\_ to cover the filing fee is enclosed.
- ☐ The Commissioner is hereby authorized to charge and credit Deposit Account No. \_\_\_\_\_ as described below. A duplicate copy of this sheet is enclosed.
- ☐ Charge the amount of \_\_\_\_\_ as filing fee.
  - ☐ Credit any overpayment.
  - ☐ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17.
  - ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

Dated: August 6, 2003

  
Signature

Kirk A. Damman, #42,461  
Lewis, Rice & Fingersh, LC  
Box IP Department  
500 North Broadway, Suite 2000  
St. Louis, MO 63102

CC:

<b>CERTIFICATE OF MAILING BY "EXPRESS MAIL" (37 CFR 1.10)</b> Applicant(s): <b>Randy J. Zauhar; William J. Welsh</b>			Docket No. <b>30/1183US</b>	
Serial No. <b>TBA</b>	Filing Date <b>August 6, 2003</b>	Examiner <b>TBA</b>		Group Art Unit <b>TBA</b>
Invention: <b>COMPUTER AIDED LIGAND-BASED AND RECEPTOR-BASED DRUG DESIGN UTILIZING MOLECULAR SHAPE</b>				
<p>! hereby certify that the following correspondence:</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;">             Utility patent application (39 pgs 3 sets of 29 drawing sheets), Petition Under 37 CFR 1.84(a)(2) For Acceptance of Color Drawings, fee transmittal for petition, ck# 233191 (\$130) for petition, unexecuted declaration w/power of attorney and acknowledgement p/c           </div> <p style="text-align: center;"><i>(Identify type of correspondence)</i></p> <p>is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 in an envelope addressed to: The Assistant Commissioner for Patents, Washington, D.C. 20231 on</p> <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;"> <u>August 6, 2003</u>  <i>(Date)</i> </div> <div style="text-align: center;"> <u>Angela D. Smith</u>  <i>(Typed or Printed Name of Person Mailing Correspondence)</i>    <i>(Signature of Person Mailing Correspondence)</i>  <u>ER288692255US</u>  <i>("Express Mail" Mailing Label Number)</i> </div> </div>				
Note: Each paper must have its own certificate of mailing.				

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	:		
Zauhar et. al.	:		
	:		
Appln. No.    TBD	:	Art Unit:     TBD	
	:		
Filed:         Herewith	:	Examiner:    TBD	
	:		
For:    COMPUTER AIDED LIGAND-BASED	:	Docket No.:  30/1183US	
AND RECEPTOR-BASED DRUG DESIGN	:		
UTILIZING MOLECULAR SHAPE	:		

**PETITION UNDER 37 C.F.R. § 1.84(a)(2) FOR ACCEPTANCE OF COLOR  
DRAWINGS**

Assistant Commissioner for Patents  
Arlington, VA

Sir:

Applicant respectfully requests that color drawings be accepted for inclusion in the above mentioned patent application. In accordance with 37 C.F.R. 1.84(a)(2) (as adjusted May 22, 2001), Applicants submit herewith a check for the petition fee set forth in 37 C.F.R. 1.17(h), and three sets of colored drawings, and the application includes the required reference to the drawings being in color.

The present disclosure involves and understanding of molecule models wherein color is used to identify structure. Further, the application includes various depictions of internal and complex modeling where black and white drawings become difficult to see and understand. Applicants have therefore included color drawings to make the detail visible.

Applicants believe no fees other than the enclosed petition fee are due in conjunction with this filing, however, the Commissioner is authorized to credit any overpayment or charge

06/08/2003 5DIRETA1 00000020 10635280

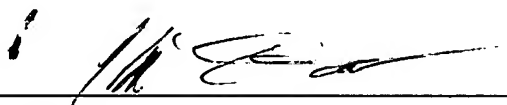
01 FC:1460

130.00 DP

any deficiencies necessary for entering this amendment, including any claims fees and/or extension fees to/from our **Deposit Account No. 50-0975**.

If any questions remain, Applicants respectfully request a telephone call to the below-signed attorney at (314) 444-7600.

Respectfully submitted,  
Lewis, Rice & Fingersh, L.C.



Dated: August 6, 2003

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Kirk A. Damman  
Registration No. 42,461  
Attorney for Applicants

**Customer Number: 22822**  
Lewis, Rice and Fingersh, L.C.  
Attn: Box IP Dept.  
500 N. Broadway, Suite 2000  
St. Louis, MO 63102-2147  
Tel: (314) 444-7600  
Fax: (314) 444-7788

08/06/03

05909 U.S. PTO

PTO/SB/17 (5-03)  
Approved for use through 04/30/2003. OMB 0651-0032  
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

# FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$)

\$130.00

## Complete if Known

Application Number	TBA
Filing Date	August 6, 2003
First Named Inventor	Randy J. Zauhar et al.
Examiner Name	TBA
Group Art Unit	TBA
Attorney Docket No.	30/1183US

## METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☐ Deposit Account:

Deposit  
Account  
Number

Deposit  
Account  
Name

The Director is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Credit any overpayments

☐ Charge any additional fee(s) during the pendency of this application

☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

## FEE CALCULATION

### 1. BASIC FILING FEE

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	750	2001	375	Utility filing fee	
1002	330	2002	165	Design filing	
1003	520	2003	260	Plant filing fee	
1004	750	2004	375	Reissue filing	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					(\$)

### 2. EXTRA CLAIM FEES FOR UTILITY AND

Extra Claims		Fee from below	Fee Paid
Total Claims	-20** =		
Independent Claims	-3** =		
Multiple Dependent			

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1202	18	2202	9	Claims in excess of 20	
1201	84	2201	42	Independent claims in excess of 3	
1203	280	2203	140	Multiple dependent claim, if not paid	
1204	84	2204	42	** Reissue independent claims over original patent	
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2)					(\$)

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

### 3. ADDITIONAL FEES

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non - English specification	
1812	2,520	1812	2,520	For filing a request for ex parte reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	410	2252	205	Extension for reply within second month	
1253	930	2253	465	Extension for reply within third month	
1254	1,450	2254	725	Extension for reply within fourth month	
1255	1,970	2255	985	Extension for reply within fifth month	
1401	320	2401	160	Notice of Appeal	
1402	320	2402	160	Filing a brief in support of an appeal	
1403	280	2403	140	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,300	2453	650	Petition to revive - unintentional	
1501	1,300	2501	650	Utility issue fee (or reissue)	
1502	470	2502	235	Design issue fee	
1503	630	2503	315	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	130.00
1807	50	1807	50	Processing fee under 37 CFR § 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Statement	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	750	2809	375	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	750	2810	375	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	750	2801	375	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	
Other fee (specify)					

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$)

\$130.00

## SUBMITTED BY

Name (Print/Type) Kirk A. Damman  
Signature

Registration No.  
(Attorney/Agent)

42,461

## Complete (if applicable)

Telephone

314-444-7783

Date

August 6, 2003

**WARNING: Information in this form may become public. Credit card information should not be included in this form. Provide credit card information and authorization on**

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.